God is Wise Teacher's Topic Guide Year 8

Topic: Exploration and Navigation **Duration: 4 weeks**

Spiritual Awareness: God is a wise guide
We need His wisdom for guidance through life. Many of the early explorers trusted God to guide them on their journeys in search for new lands. Christians need to ask God for wisdom for every step they take.

Values: Our response to 'God is Wise'
- **Integrity**: Ask God and find out from the Bible: What is the right thing to do? Put this into practice
- **Wisdom**: Learn from people who are wise
- **Trust** in God to be a guide for the journey of life

Outcomes: Students will
- describe famous journeys of explorers though history.
- work with maps and trace journey routes.
- discover the means of guidance for early explorers.
- use a commercial compass and make a simple compass
- understand the preparations involved for journeys.
- sequence historical people and events
- appreciate the courage of early navigators
- appreciate that God's hand was upon early sea exploration

Biblical references: God is our guide
Bible stories and passages
The book of Exodus - God guided the Israelites on their journey to the Promised Land.
Exodus 13:21-22 Guided by fire and cloud.
Matthew ch 2- The magi were guided by the star and the scriptures; an angel guided Joseph through a dream to make the journey to Egypt, and later, back to Israel.
Proverbs 6:20-23 Do what your father tells you my son, and never forget what your mother taught you. Keep their words with you always, locked in your heart. Their teaching will lead you when you travel, protect you at night, and advise you during the day. Their instructions are a shining light; their corrections can teach you how to live.

Verses
Psalm 16:7 I praise the Lord because He guides me. Even at night I feel His leading.
Psalm 119:105 God's word is a lamp to our feet.
Proverbs 13:13 If you refuse good advice, you are asking for trouble; follow it and you are safe.
Proverbs 13:20 Keep company with the wise and you will become wise. It is good to take wise advice.

Key Questions
What is wisdom?
How do we know the right thing to do?
What important decision do we have to make in life?
What is a guide? When do we need a guide?
Which people do we look to guide us through the important decisions of life?
Who is the best guide through life?

Activities

Explorers and navigators (Land and Sea)

- Discuss reasons for undertaking journeys, past and present e.g. holidays, to help others, to ask for help, to bring news, exploration, trading.
- Compare modern methods of navigation to earlier ones.
- List different types of journeys e.g. on foot, by sea, road, air.
- Make a list of food that would be suitable to take on: a long journey by foot, a long sea journey.
- Trace the routes of early explorers on a world map. Discuss hazards of the journey and the necessary preparations.
- Research the history of some early navigators and explain how they used stars, the sun, sextants and maps for guidance.
- Conduct orienteering exercises using maps and compasses.
- Prepare a back-pack of things you would need to go on a two-day hike.
- Compare journeys over different terrains e.g. desert, rainforest, ice.
- Map the route of the longest journey you have ever undertaken. Mark towns / cites, rivers, highways, mountain ranges.
- Make a chart showing the development of ships from raft to modern ships.
- Classify ships according to their different functions.
- Study the sea voyages of Paul and draw the type of vessel he may have traveled on. Trace his journey on a map.
- Study the history of sea transport. Build model boats and miniature ports of different historical periods.

Assessment

1. Write a story or give an oral presentation on the journey of an early navigator/explorer and describe the impact this journey had on the history of your country.
2. What have I learned from the study of explorers…
    a. about God?
    b. about doing what God wants me to do?
    c. about the Bible?

Learning Connections

English: Read the biographies of explorers. Imagine you were aboard a ship on an early exploration expedition. Write your experiences in the form of a diary.
Science: Study the forces in the Creation that are used by man for moving ships and sledges
Thinking skills: Ships and navigation
Research cards: Sea voyages
Biographies: John Williams, James Cook

Values education Year 8: God is Wise
Time management

Wisdom is:

- Knowing how to make good use of your time
- Being organized
- Doing the most important things first (prioritizing)
- Not putting off the things that need to be done today (procrastination)

Activities

1. **Prioritizing**

Imagine that you are planning a birthday party for your best friend.
Make a list of all the jobs that need to be done to make it happen.
Now put numbers on the things in the list, starting with 1 as the most important thing to get done, and so on.

2. **Procrastination**

What is the problem with procrastination?

Procrastination is "the act of willfully delaying the doing of something that should be done."
Procrastination is putting off until tomorrow what could be done today

Why do we procrastinate?
Sometimes we are being lazy.
Sometimes our to-do list is so full that we get overwhelmed and end up doing nothing at all.
Sometimes we allow ourselves to get distracted, e.g. by social media
Sometimes we are fearful about the job to be done so we put it off. Perhaps we think we are not capable of doing the job.

Steps in time management:

1. You must really, truly WANT to manage your time well.
2. Practice the areas in which you are slow and inefficient, and get better at these areas.
3. Make a list of the things you need to do. Prioritize.

Good advice about time management from the Bible:
Proverbs 15:19; 18:9 Warnings against laziness
Colossians 3:23 Whatever you do, do it heartily as if for the Lord
James 4:13-14 Life is short. We don't know what tomorrow will bring. Do today what you can do today.

Art Year 8

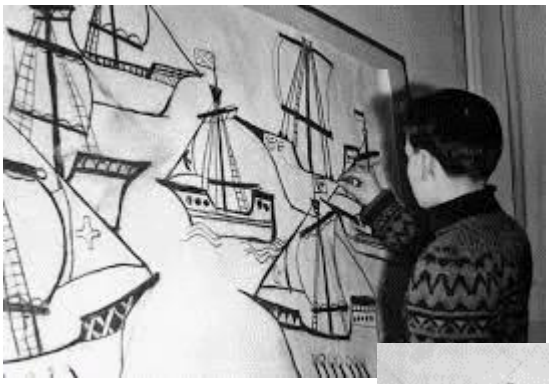
Exploration and Navigation

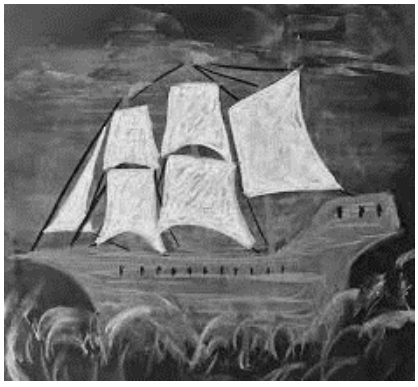
God is Wise

Biblical wall art and text: 'God is a wise guide'.
Your word is a lamp for my feet, a light on my path. Psalm 119:105
Illustrate the Biblical event found in Exodus 13:21-22, where the Israelites were guided by fire and cloud during their journey through the desert to the Promised Land.

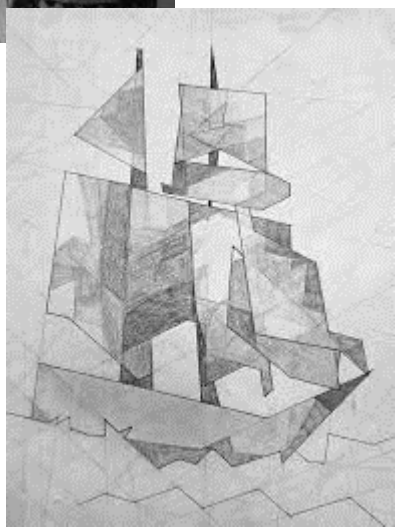
Construction
Students can make models of rafts, canoes or sailing ships.

Painting and drawing
Realistic images





Abstract images
Students can study the shapes within a sailing ship and form a picture using geometric shapes.



Practical Science: Exploration and navigation

Make a compass

Make a compass that shows due North with surprising accuracy.

What you need:

- bowl of water (non-metal)
- sewing pin or needle
- magnet
- small piece of craft foam, cork, or cardboard
- Sticky tape

What to do:

1. Cut a small circle from a material that will float in water, e.g. some craft foam, a cork or even a piece of cardboard.
2. The next step is to turn the sewing needle into a magnet. To do this, stroke the needle across the magnet about thirty to forty times. Be sure to stroke in one direction only, not back and forth. The needle will now be magnetized.
3. Next, place the needle on the circle of craft foam or cork, secure it with sticky tape and place it on top of the water. Try to place it in the center of the bowl, keeping it away from the edges. The needle will begin to slowly turn around and eventually the needle will point North and South. Check the accuracy of the home-made compass with a commercial compass

How it works:

Every magnet has a north and south pole. A compass is small magnet that aligns itself with the north and south poles of the Earth's magnetic field. As the needle is stroked across the magnet, it becomes magnetized because the electrons within the needle straighten up and align themselves with the magnet. The magnetized needle then aligns itself with the Earth's magnetic field when it is placed on top of the water.

Orienteering Study

You can use a homemade compass, or a regular one, to combine an orienteering activity with a nature study.

1. Find an area outside that you would like to work with. Use a compass to find magnetic north.

2. Once you've found the right direction, mark off a square with sides ten paces long: mark the starting point and go ten paces due north, then ten to the east, ten south, and ten paces west, using sticks or rocks to mark the corners. Identify plants and objects within the square.
4. Record all of your findings on a map, making sure to mark the directions and represent the square.

Practical Science: Exploration and navigation
Partner Directions

This direction game improves students' understanding of the directions north, south, east and west; helps them learn to read a compass; and improves communication skills.

What you will need:

- Paper, pencil
- Any object
- A compass

What to do

1. Each student draws up a map showing a list of directions that they will give to a partner. The directions will lead to a hidden object.
2. One person (the finder) is given a compass.
3. The person with the map hides the object, out of sight of the student with the with the compass.
4. The student with a compass will now try to find the object.
5. The student with the map must stand behind a line and give his respective partner the list of directions. For example, the directions could include to walk two steps north, then jump three times to the west and so on.
6. The partner with the compass must hear each direction and then use the compass to perform each step.
7. Once the hidden object is found, another pair can take a turn.

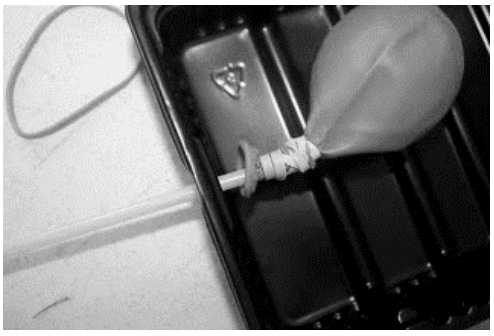
Practical Science
Balloon powered boat

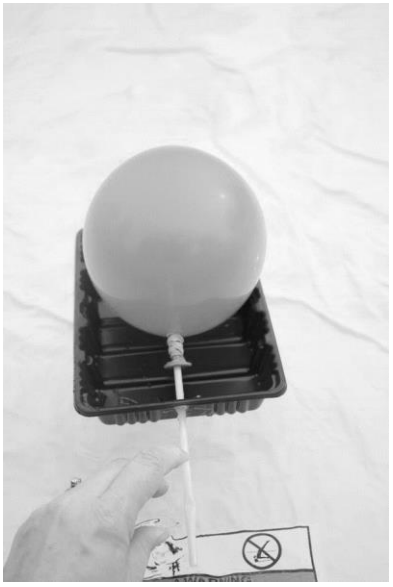
What you will need:

- container for the base of boat (e.g. a recycled food packaging tray with low sides and flat bottom)
- hole punch
- plastic straw
- rubber band
- balloon
- strong tape or hot glue
- large container of water

How to Assemble a Balloon Powered Boat

- Take the recycled tray.
- Use a hole punch to make a hole in one of the short sides of the boat.
- Take a balloon and rubber band. Attach the open end of the balloon to the straw with the rubber band.
- Stick the straw through the hole in the tray, (the balloon is on the inside of your boat).
- Tape the straw to the base of the boat, or secure it with a hot glue gun.
- Fill your container with water.
- Blow up the balloon holding the straw tightly, then release the boat in the water.





Practical Science

Tin foil boats

http://www.kids-fun-science.com/easy-science-experiment.html

In this easy science experiment, you will be designing a tin foil boat that will hold the greatest number of nails or marbles.

What you need:

- Tin foil
- Bowl
- Scissors
- Large heavy nails, or marbles
- Water

What to do

Cut a piece of tin foil 14 x 16 cm, (5 x 6) inches.

Fold up the sides of the boat so it will not sink and hold a cargo of nails.

Place the boat in the bowl of water. Begin adding nails for the boat's cargo.

See how many nails your boat can carry before it sinks.

Work in a group. See which one of you can create the boat that will carry the greatest amount of cargo.

Try different ways to distribute the weight of the nails on your barge so you can carry the maximum number.

Try another science experiment.

Create a boat out of tin foil that is 10 x 12 cm (4 x 5 inches). Make a prediction about how many nails you will be able to carry as cargo in this boat.

Create boats out of clay and see if you can make them float and carry cargo.

Science behind this experiment

There are two primary forces acting on this science experiment. The first force is gravity. Gravity is trying to pull the tin foil and nails downward. The force of buoyancy is pushing the boat toward the surface.

The gravitational force is determined by the weight of the tin foil and the weight of the nails in the boat. The force of buoyancy is the weight of the water displaced by the boat.

Your boat will continue to float as long as the force of buoyancy is greater than the force of gravity and you do not overload the boat so it will tip over or leak.

Practical Science
Why things float

People have been wondering why things float since olden times. According to legends the ancient Greek, Archimedes, conducted experiments to test why things float or sink. Here is what Archimedes discovered:

When an object is dropped into water, some of that water is displaced (pushed aside). At the same time, there is an upward force on the object called buoyancy. Buoyancy pushes the object up. This changes its weight. If the weight of the object is heavier than the amount of water it displaces, the object will sink. If the amount of water displaced is equal to the weight of the object, it will float.

So…an object will sink if it weighs more than the water it displaces.

Importance of the Principle
Archimedes principle is used in shipbuilding to ensure that ships will float. Ships are usually made of metal and have a hollow hull, which allows the water to be displaced evenly. The ship will sink down into the water only until the weight of the water it displaces is equal to the weight of the ship.

Let's try an experiment
Our fluid is water.
A cubic centimeter of water weighs 1 gram. So, in order to float, an item that weighs 1 gram must displace more than a cubic centimeter of water.

What you will need:
- A piece of modelling clay
- A container of water

First test: Will it float?
- Take a piece of modeling clay. Shape it into roughly a cubic centimeter. See if it will float.
- Record your results.

Second test: Will it float?
- Now, flatten out the same piece of clay and make a boat shape. A flat bottom with a lip around the edge works well.
- Place it onto the surface of the water. It should displace a lot more water this time and float.
- Record your results.

Why did it float?
Although the weight of the clay didn't change, the amount of water displaced did change.

Thinking Skills Wise Yr 8

Ships and navigation 1 List 10 materials which are **not** used in the construction of a ship.	**Ships and navigation 2** What if: **The world fuel supplies were immediately halved.** List 5 consequences.
Ships and navigation 3 List 3 advantages and 3 improvements to: **a rudder**	**Ships and navigation 4** List attributes of both, then combine: **a tug boat** and **a crane.** Draw this new object (if possible).
Ships and navigation 5 Name 10 things that this picture could represent in regard to navigation. ▲ ▲ ▲	**Ships and navigation 6** How many ways can you: **propel a ship.** List at least 5 different ways.

Thinking Skills Wise Yr 8

Ships and navigation 7 Draw a cruise liner. Now redesign it by using the following steps: **B** – igger **I** – instead of **N** – nonsense **G** – et rid of **O** – ther uses	**Ships and navigation 8** Predict what a **Speed boat** Will look like in 100 years. Draw this boat (if possible).
Ships and navigation 9 Write down 10 different uses for: **A sunken wreck**	**Ships and navigation 10** **The Titanic is sinking!** Design an improved type of lifeboat that can be quickly and efficiently used in this event.
Ships and navigation 11 Name 5 things that a **steering wheel** and **a hull** have in common.	**Ships and navigation 12** The answer is **"Channel beacons".** Write down 5 questions.